STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0112500
Owner:	Darrco LLC
Address:	PO Box 4087, Springfield, MO 65808
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	American Dehydrated Foods, Inc.
Facility Address:	PO Box 103, Verona, MO 65769
Legal Description:	See page 2
Receiving Stream:	Unnamed Tributary to Browning Hollow & Spring River (U)
First Classified Stream and ID:	See page 2
USGS Basin & Sub-watershed No.:	See page 2

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

See page 2

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

April 5, 2002
Effective Date

Stephen M. Mahfood, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

April 4, 2007
Expiration Date

Interim Director of Staff, Clean Water Commission

MO 780-0041 (10-93)

FACILITY DESCRIPTION (continued)

Outfalls #001 - 005 - Industrial Wastewater - SIC #2015
No discharge of Process Waste
Six storage tanks and three storage basins (one basin is aerated)/process water and sludge is land applied.

Total number of acres available for land application – 5,740 acres
Land application sites are contracted.

Outfall #001 North Plant Location – Stormwater from land application site
Flow is dependent on precipitation
Legal Description: Sec 28, T27N, R26W, Lawrence County
First Classified Stream and ID: Spring River 3 (P)(03165)
USGS Basin & Sub-watershed No.: (11070207-010001)

Outfall #002 North Plant Location - Aerated Lagoon/storage tank/process water and sludge is land applied.
Design flow is 28,000 gpd (process waste and rainwater for 365 day average)
Actual flow is 26,980 gpd
Design sludge Production is 110 dry tons per year
Land Application Rates are based on Plant Available Nitrogen (PAN)
Concrete Storage Tank total storage capacity 20,000 gallons
Aerated Lagoon storage volume 1,496,000 gallons; minimum operating level 11.0 feet below overflow; maximum operating level 1.0 foot below overflow; approximate 52 days storage.
Legal Description: Sec 28, T27N, R26W, Lawrence County
First Classified Stream and ID: Spring River 3 (P)(03165)
USGS Basin & Sub-watershed No.: (11070207-010001)

Outfall #003 North Plant Location - Lagoon underdrain
Legal Description: Sec 28, T27N, R26W, Lawrence County
First Classified Stream and ID: Spring River 3 (P)(03165)
USGS Basin & Sub-watershed No.: (11070207-010001)

Outfall #004 South Plant Location – Stormwater from land application site only
Flow is dependent on precipitation.
Legal Description: Sec 17, T26N, R26W, Lawrence County
First Classified Stream and ID: Spring River 3 (P)(03165)
USGS Basin & Sub-watershed No.: (11070207-010001)

Outfall #005 South Plant Location - Five concrete storage tanks/two storage basins/process water and sludge is land applied.
Design flow is 11,000 gpd (process waste and rainwater for 365 day average)
Actual flow is 10,970 gpd
Design sludge Production is 29 dry tons per year
Land Application Rates are based on Plant Available Nitrogen (PAN)
Concrete Storage Tanks total storage capacity 17,000 gallons
Storage basin #1 storage volume 106,900 gallons; minimum operating level 3.5 feet below overflow; maximum operating level 1.0 foot below overflow; approximate 9 days storage.
Storage basin #2 storage volume 672,600 gallons; minimum operating level 8.0 feet below overflow; maximum operating level 1.0 foot below overflow; approximate 57 days storage.
Legal Description: Sec 17, T26N, R26W, Lawrence County
First Classified Stream and ID: Spring River 3 (P)(03165)
USGS Basin & Sub-watershed No.: (11070207-010001)

FACILITY DESCRIPTION (continued)

Land Application System Design:

Facility type is No-discharge Storage and Land Application System for year round flows.
Land application sites not owned by the permittee are included in this permit.
Application rate for sludge and egg shell is based on nutrient loading rate & soil pH.

Design flow is:	North Plant 10,220,000 gallons/year including 1-in-10 year storm water flows. South Plant 4,015,000 gallons/year including 1-in-10 year storm water flows.
Application rates(design):	North Plant approximately 22,800 lbs. Plant Available Nitrogen South Plant approximately 3,200 lbs. Plant Available Nitrogen

Land Application site(s) are at total of 5,740 acres.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfalls #002 & #005 – Emergency discharge from storage basin (Note 1)						
Flow	MGD	*		*	once/day**	24 hr. estimate
pH - Units	SU	***		***	once/week**	grab
Biochemical Oxygen Demand$_5$	mg/L	45			once/week**	grab
Total Suspended Solids	mg/L	45			once/week**	grab
Ammonia nitrogen as N	mg/L	****		****	once/week**	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE July 28, 2002.						
Land Application Operational Monitoring (Notes 2 & 3)						
Lagoon Freeboard	feet	*			once/month	measured
Irrigation Period	hours	*			once/daily	total
Volume Irrigated	gallons	*			once/daily	total
Application Area	acres	*			once/daily	total
Application Rate	inches/acre	*			once/daily	total
Rainfall	inches	*			once/daily	total
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE January 28, 2003. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Part I STANDARD CONDITIONS DATED October 1, 1980, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfalls #002 & #005 - Land Applied Wastewater and Sludges (Notes 4 & 5)						
Total Kjeldahl Nitrogen as N	mg/L	*			once/quarter	grab
Oil and Grease	mg/L	*			once/quarter	grab
Total Phosphorus as P	mg/L	*			once/quarter	grab
Total Sodium	mg/L	250			once/quarter	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE July 28, 2002.						
Outfalls #001, #003 and #004 – Storm Water Runoff and Lagoon Underdrain (Note 6)						
Total Suspended Solids	mg/L	****			once/month	grab
Total Kjeldahl Nitrogen as N	mg/L	****			once/month	grab
Ammonia Nitrogen as N	mg/L	****			once/month	grab
					Lagoon underdrain will be grab sampled once per quarter.	
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE July 28, 2002. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Part I STANDARD CONDITIONS DATED October 1, 1980, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* Monitoring requirement only.
** Monitor only when discharge occurs. Report as no-discharge when a discharge does not occur during the report period.
*** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.
**** Comply with water quality standards per Special Conditions #4.
***** Monitoring for this facility shall consist of an annual operating report to be submitted by October 28 of each year. This is not affected by any reporting requirements in the "Standard Conditions". The report shall detail any unusual occurrences such as spills, tank failures or overflows, ruptured piping, fishkills, fire fighting activities, or other upsets which resulted in loss of product. Product includes, but is not limited to, fuels, oils & paint. The report shall detail any remedial work undertaken to recover products, or cleanup of the site. The report should indicate in none of the above has occurred. Sampling analysis or monitoring for this outfall will be at the request of the department(See special conditions for Outfall #006 under section C).

Note 1 - **No-discharge facility requirements**. Wastewater shall be stored and land applied during suitable conditions so that there is no-discharge from the lagoon or irrigation site. An emergency discharge may occur when excess wastewater has accumulated above feasible irrigation rates due to precipitation exceeding the 1-in-10-year 365 day rainfall or the 25- year 24-hour storm event.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

Note 2 - Records shall be maintained and summarized into an annual operating report, which shall be submitted by January 28th of each year for the previous calendar year period. The report shall include the following:

a. Record of maintenance and repairs performed during the year, average number of times per month the facility is checked to see if it is operating properly, and description of any unusual operating conditions encountered during the year;
b. The number of days the lagoon has discharged during the year, the discharge flow, the reasons discharge occurred and effluent analysis performed; and
c. A summary of the irrigation operations including freeboard at the start and end of the irrigation season, the number of days of irrigation for each month, the total gallons irrigated, the total acres used, crops grown, crop yields per acre, the application rate in inches/acre per day and for the year, the monthly and annual precipitation received at the facility and summary of testing results.

Note 3 - Lagoon freeboard shall be reported as lagoon water level in feet below the overflow level. See Special Conditions for Wastewater Irrigation System requirements.

Note 4 - Wastewater that is irrigated shall be sampled at the irrigation pump or wet well.

Note 5 - Monitor once per quarter in the months of March, May, July and September.

Note 6 - Monitoring during the first hour after a discharge from a rainfall event greater than 0.2 inch in a 24 hour period. Storm water runoff samples shall be collected for each storm water discharge point and the sample from each outfall shall be tested separately.

C. SPECIAL CONDITIONS

1. Report as no-discharge when a discharge does not occur during the report period.

2. Outfalls must be marked in field and on the topographic site map submitted with the permit application.

3. This permit may be reopened and modified, or alternatively revoked and reissued, to:
   (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
      (2) controls any pollutant not limited in the permit.
   (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
   (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

4. Lagoons and earthen basins shall have a liner that is designed, constructed and maintained in accordance with state regulations. The department may require corrective action as necessary to eliminate excess leakage.

C. SPECIAL CONDITIONS (continued)

5. Water Quality Standards
   a. Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
   b. General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
      (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
      (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
      (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
      (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
      (5) There shall be no significant human health hazard from incidental contact with the water;
      (6) There shall be no acute toxicity to livestock or wildlife watering;
      (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
      (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

6. Annual Report (Land Application Records)
   An annual report is required in addition to the quarterly reporting under Section A of this permit. The annual report shall be submitted by January 28 of each year for the previous growing season from October 1 through September 30 or an alternate 12 month period approved by the Department and listed in the Operation and Maintenance Manual. This report shall be submitted using report forms approved by the Department and shall include a summary of the monitoring and record keeping required by the Special Conditions and Standard Conditions of this permit.

7. Wastewater Land Application System.
   a. Discharge Reporting Any unauthorized discharge from the lagoon or land application system shall be reported to the department as soon as possible but always within 24 hours. Discharge is allowed only as described in the Facility Description and Effluent Limitations sections of this permit.
   b. Land Application Design Permittee shall operate the land application system in accordance with the design parameters listed in the Facility Description section of this permit:
   c. No-Discharge System When the Facility Description is a No-Discharge, wastewater must be stored and land applied at appropriate times. There shall be no-discharge from the land application site or storage lagoon except due to precipitation exceeding either the 1-in-10 year rainfall event for the design storage period or the 25-year-24-hour rainfall event.
      (1) Storage Basin(s) and Lagoon(s) Operating Levels - No-discharge Systems The minimum and maximum operating water levels for the storage lagoon shall be clearly marked. Each storage structure shall be operated so that the maximum water elevation does not exceed one foot below the overflow point except due to exceedances of the 1-in-10 year or 25-year-24 hour storm events. Wastewater shall be land applied whenever feasible based on soil and weather conditions and permit requirements. Storage lagoon(s) shall be lowered to the minimum operating level prior to each winter by November 30.

C. SPECIAL CONDITIONS (continued)

7. Wastewater Land Application System (continued)

d. Emergency Spillway Lagoons and earthen storage basins shall have an emergency spillway to protect the structural integrity of earthen structures during operation at near full water levels and in the event of overflow conditions. The spillway shall be at least one foot below top of berm. The department may waive the requirement for overflow structures on small existing basins.

e. General Irrigation Requirements The land application system shall be operated so as to provide uniform distribution of wastewater or sludge over the entire site. A complete ground cover of vegetation shall be maintained on the site unless the system is approved for row crop irrigation. Wastewater shall be land applied only during daylight hours.

f. Saturated/Frozen Conditions There shall be no Land application during frozen, snow covered, or saturated soil conditions. There shall be no land application on days when more than 0.2 inch of precipitation is received or when there is observation by operator of an imminent or impending rainfall event.

g. Buffer Zones There shall be no land application within 300 feet of any down gradient pond, lake, sinkhole, losing stream or water supply withdrawal; 100 feet of gaining streams or tributaries; 150 feet of dwelling; or 50 feet of the property line.

h. Public Access Restrictions Public access shall not be allowed to the land application site(s).

i. Equipment Checks during Land Application The irrigation system and application site shall be visually inspected at least once/hour to check for equipment malfunctions and runoff from the irrigation site.

8. Plant Available Nitrogen (PAN) Loading Rates

a. Wastewater, sludge and fertilizer nitrogen applications shall not exceed the crop nitrogen requirements based on realistic crop yield goals and the Plant Available Nitrogen (PAN) method. The wastewater application rate shall be calculated as follows:

PAN = CNR - SRN - CFN

WHERE: CFN = Commercial Fertilizer Nitrogen applied
CNR = Crop Nitrogen Requirement
PAN = Plant Available Nitrogen in wastewater and sludges
SRN = Soil Residual Nitrogen

b. Plant Available Nitrogen(PAN) in pounds/acre for wastewater is calculated as follows:

PAN = [mg/L Total N] x [0.226] x [inch/acre/year] x [Availability Factor].

WHERE: Total N = [Ammonia as N] + [Organic Nitrogen as N] + [Nitrate as N].
Organic Nitrogen = [Total Kjeldahl Nitrogen as N] - [Ammonia as N].

c. Plant Available Nitrogen (PAN) Availability factors for wastewater and sludges are as follows:

Type of Nitrogen	Surface Application	Immediate Incorporation or Subsurface Injection
Ammonia	0.6	0.9
Organic	0.4 - 0.7*	0.4 - 0.7*
Nitrate	0.9	0.9

*Note: When applied each year, the constant for year 3 and thereafter is 0.7 for primary/secondary wastewater treatment sludges and anaerobic stored biosolids. The organic nitrogen availability based on time after land application is: 0.4 for year 0-1, 0.2 for year 1-2 and 0.1 for year 2-3.

C. SPECIAL CONDITIONS (continued)

8. Plant Available Nitrogen (PAN) Loading Rates (continued)

d. Soil Residual Nitrogen (SRN).

For Annual Crops, the nitrogen availability from soil organic matter must be included based on soil CEC and crop season as follows:

SRN in pound N/acre* = [percent organic mater] x Soil Availability Factor

Soil Availability Factor by Soil CEC Ranges and Organic Matter

Growing Season	Organic Matter	CEC # 10	CEC 10-18	CEC >18
Summer	1%	40*	20	10
Winter	1%	20*	10	5

***Note:** If CEC is less than 10 and organic matter is 1.5% or greater, the total SRN is constant at 60 pounds nitrogen for summer and 30 pounds for winter.

For Perennial Crops the SRN is considered zero(0) for purposes of these calculations because the SRN has already been considered in the crop fertilization recommendations in the referenced publications under the paragraph below.

e. Crop nitrogen requirements shall be based on University of Missouri publication, Soil Test Interpretations and Recommendations Handbook, as revised. PAN calculations, crop yields and crop removal rates shall be listed in the annual report.

f. If a crop is not harvested, the PAN rate shall not exceed 40 lbs/acre/year.10.

9. Operation and Maintenance Manual

The permittee shall develop, maintain and implement an Operation and Maintenance (O&M) Manual that includes all necessary items to ensure the operation and integrity of the waste handling and land application systems. Copies of the O&M Manual and subsequent revisions shall be submitted to the departments. Water Pollution Control Program and Regional Office for review and approval. The O&M Manual shall include, but not limited to, the following:

a. Detailed topographic maps of the property showing all land application fields including the identification numbers for each field and tract. For spray irrigation systems, each irrigation run shall also be shown. Each field, tract and irrigation run shall have an identification number for record keeping and tracking purposes. The maps shall also indicate separation distances from streams, ponds, wells, and property lines and shall indicate areas exceeding 10 percent slopes and other areas that are not suitable for land application.
b. Procedures for determining Plant Available Nitrogen (PAN) loading rates.